



CHAIN RULE

PUZZLE WORKSHEET



By Katie Brown

What is the Store Policy at Plastic Mart?

Name ANSWER KEY

Find $f'(2)$ for each problem. SHOW ALL WORK! Write the letter of each exercise in the box for that number.

E. $f(x) = (2x + 1)^2$

$f'(2) = 2(2(2)+1)(2) = 20$

A. $f(x) = \sqrt{6-x}$

$f'(2) = \frac{1}{2}(6-2)^{-\frac{1}{2}} \cdot -1 = -\frac{1}{4}$

I. $f(x) = 7(5x - 1)^{-1}$

$f'(2) = (-7(5(2) - 1)^{-2}) \cdot 5 = \frac{-35}{81}$

L. $f(x) = \frac{3}{(2x-3)^2}$

$f'(2) = -6(2(2)-3)^{-3}(2) = -12$

S. $f(x) = (3x - 2)^3$

$f'(2) = 3(3(2) - 2)^2(3) = 144$

A. $f(x) = \sqrt[3]{4x}$

$f'(2) = \frac{1}{3}(4(2))^{-\frac{2}{3}}(4) = \frac{1}{3}$

Find $g'(\frac{\pi}{3})$ for each problem. SHOW ALL WORK! Write the letter of each exercise in the box for that number.

L. $g(x) = -\cos(\frac{x}{2})$

$g'(\frac{\pi}{3}) = \sin(\frac{\pi}{6}) \cdot \frac{1}{2} = \frac{1}{4}$

N. $g(x) = \sin(2x - \pi)$

$g'(\frac{\pi}{3}) = \cos(\frac{2\pi}{3} - \pi) \cdot 2 = 1$

L. $g(x) = \sec(2x + \pi)$

$g'(\frac{\pi}{3}) = \sec(\frac{5\pi}{3}) \tan \frac{5\pi}{3} \cdot 2 = -4\sqrt{3}$

A. $g(x) = \tan(6x)$

$g'(\frac{\pi}{3}) = \sec^2(2\pi)(6) = 6$

E. $g(x) = \csc(\pi - x)$

$g'(\frac{\pi}{3}) = -\csc(\frac{2\pi}{3}) \cot(\frac{2\pi}{3})(-1) = -\frac{2}{3}$

R. $g(x) = \cot^2 x$

$g'(\frac{\pi}{3}) = -2\cot \frac{\pi}{3} \csc^2 \frac{\pi}{3} = \frac{-8}{3\sqrt{3}}$

Find $h'(1)$ for each problem. SHOW ALL WORK! Write the letter of each exercise in the box for that number.

S. $h(x) = \cos(1-x)^2$

$h'(1) = -\sin(1-1)2(1-1)(-1) = 0$

Y. $h(x) = 3x - 4\sin(\frac{\pi x}{2})$

$h'(1) = 3 - 4\cos(\frac{\pi}{2}) \cdot \frac{\pi}{2} = 3$

L. $h(x) = x^2\sqrt{5-x^2}$

$h'(1) = 1 \cdot \frac{1}{2}(4)^{-\frac{1}{2}} \cdot -2 + \sqrt{4} \cdot 2 = 3.5$

V. $h(x) = (\frac{x+1}{2x})^3$

$h'(1) = 3(\frac{1+1}{2})^2 \cdot \frac{2(1)-2(2)}{2 \cdot 2} = -3/2$

6	-12	$\frac{1}{4}$	144	$\frac{1}{3}$	3.5	$-\frac{2}{3}$	0	$-\frac{1}{4}$	$-\frac{8}{3\sqrt{3}}$	20	$-\frac{3}{2}$	$-\frac{35}{81}$	1	3	$-4\sqrt{3}$
A	L	L	S	A	L	E	S	A	R	E	V	I	N	Y	L